Genesis
Digital Imaging, Inc.

OmniArchive

Installation & User Manual

OmniArchive
Volume 1.0

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02/15/08

USER MANUAL

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Chapter 1

Introduction

- **Welcome to OmniArchive**
- **How to Use this Manual**
- **Key Features**
- **Hardware Requirements**

Introduction of OmniArchive

Welcome to OmniArchive

OmniArchive is PACS Server software, which can be installed by Users or Engineers. It enables Omni-Vue users to share patient's exam and primary diagnostic interpretations (Diagnostic Workstation) and Physicians to practice patient care (Clinical Workstation).

In addition, OmniArchive provides a compression setup for the outstanding image. Users can also directly access to OmniArchive as a client using direct access of ODBC and retrieve the image data within 2~4 seconds.

OmniArchive is DICOM compatible including DICOM Storage and DICOM Query and Retrieve for easy networking with third vendors' PACS or modalities.

How to Use this Manual

The Next chapter offers a walkthrough for typical usage of OmniArchive, which includes how to install and setup.

Appendix and FAQ's section should further assist or guide while working on OmniArchive.

Key Features

1) Multi-Thread for incoming and outgoing DICOM service, and archiving service.
2) Client workstation of OmniArchive supporting direct DB access.
3) JPEG Lossless Compression
4) DICOM Query and Retrieve SCP
5) DICOM Storage SCU and SCP

Hardware Requirements

1) CPU: Pentium 4 or AMD equivalent.
2) Memory: 1 GB or higher.
3) HDD: 40G HDD or higher.
4) Ethernet network card: 10/100Mb NIC.
5) OS: Window XP Pro.

Chapter

2 How to Install OmniArchive

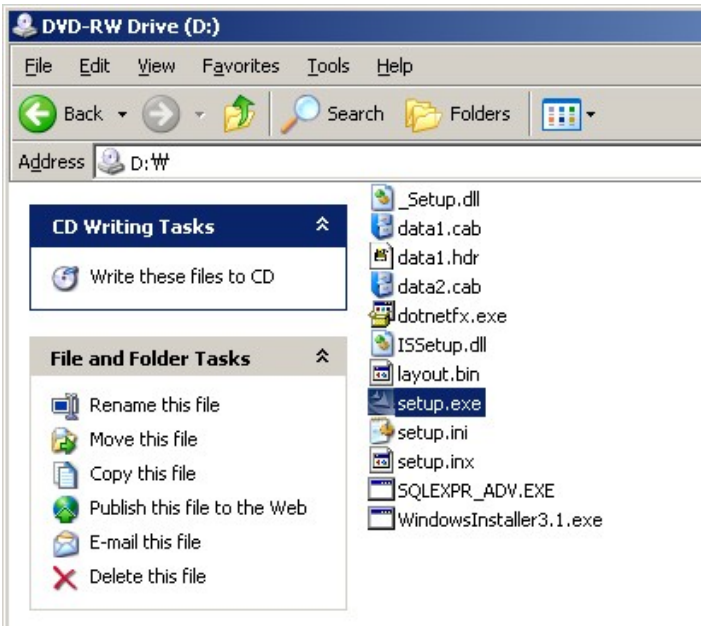
- **Installation of OmniArchive**
- **Directory and Files**
- **How to setup**
- **Modality Interface (M/I) and Testing**

How to Install OmniArchive

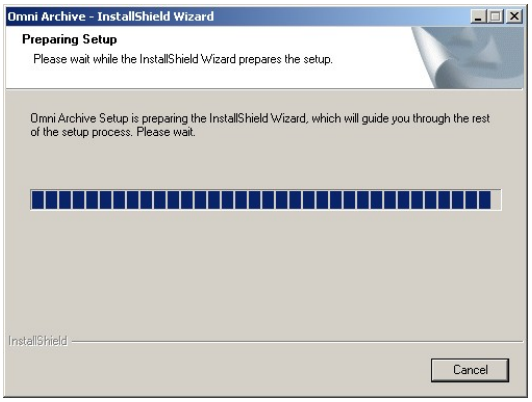
1. Insert the OMNIARCHIVE Installation CD.
2. To begin installation, open My Computer.

3. Click on the CD drive labeled **GenesisDigital**.

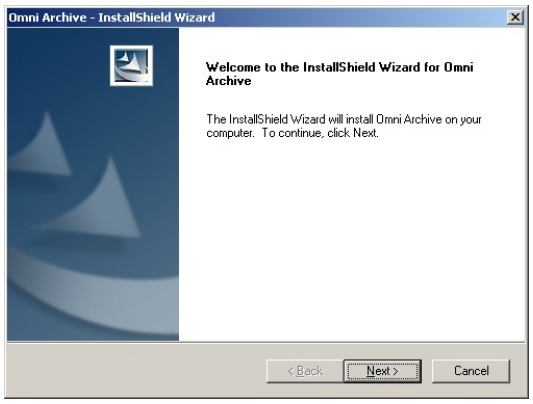
4. Click on the Setup icon to initiate the InstallShield Setup Launcher.



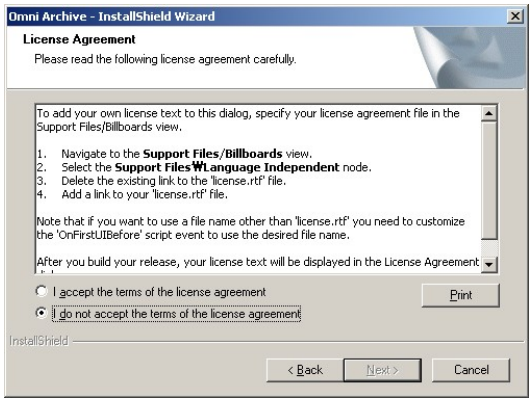
5. There will pop-up a “Preparing Setup” dialog for few seconds, then will go to next step. **No user action is required in this step**.

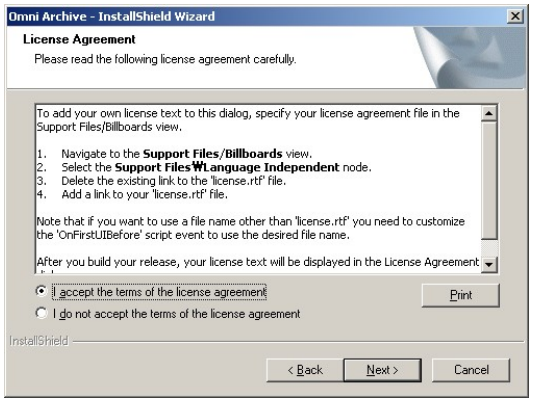

Omni Archive - InstallShield Wizard
Preparing Setup
Please wait while the InstallShield Wizard prepares the setup.
Omni Archive Setup is preparing the InstallShield Wizard, which will guide you through the rest of the setup process. Please wait.
InstallShield
Cancel

6. Click **Next**.

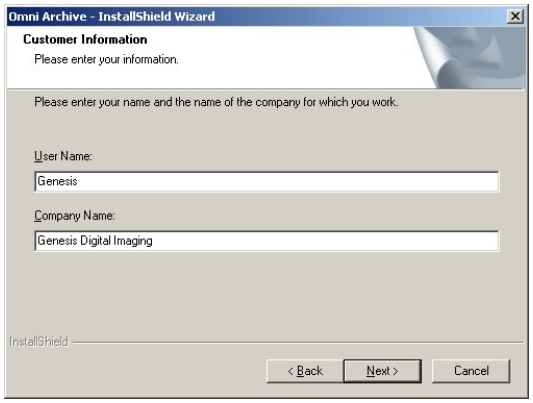

Omni Archive - InstallShield Wizard
Welcome to the InstallShield Wizard for Omni Archive
The InstallShield Wizard will install Omni Archive on your computer. To continue, click Next.
< Back
Next >
Cancel

7. Click **"I accept the terms of the license agreement"**, and then click **Next**.

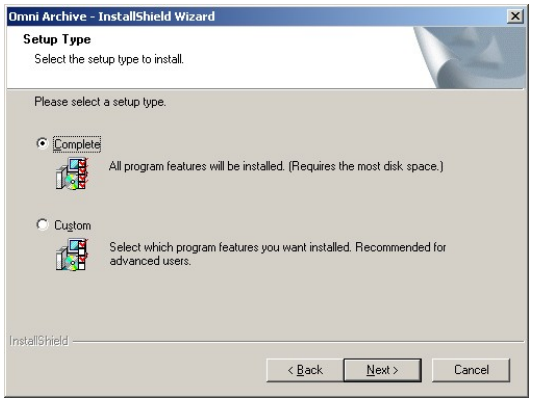

Omni Archive - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
To add your own license text to this dialog, specify your license agreement file in the Support Files/Billboards view.
1. Navigate to the Support Files/Billboards view.
2. Select the Support Files\Language Independent node.
3. Delete the existing link to the 'license.rtf' file.
4. Add a link to your 'license.rtf' file.
Note that if you want to use a file name other than 'license.rtf' you need to customize the 'OnFirstUIBefore' script event to use the desired file name.
After you build your release, your license text will be displayed in the License Agreement
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel


Omni Archive - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
To add your own license text to this dialog, specify your license agreement file in the Support Files/Billboards view.
1. Navigate to the Support Files/Billboards view.
2. Select the Support Files\Language Independent node.
3. Delete the existing link to the 'license.rtf' file.
4. Add a link to your 'license.rtf' file.
Note that if you want to use a file name other than 'license.rtf' you need to customize the 'OnFirstUIBefore' script event to use the desired file name.
After you build your release, your license text will be displayed in the License Agreement
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel

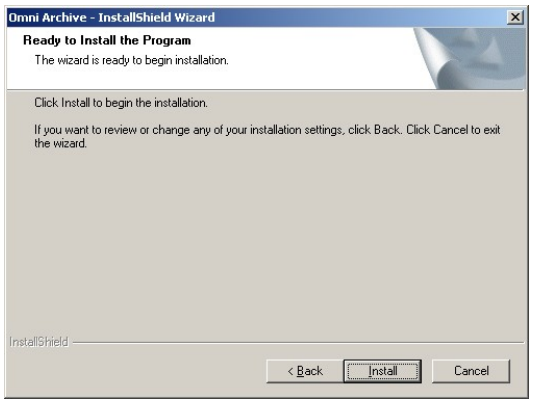
8. Enter the principal owner's name and the name of your company in the indicated areas. Click **Next**.



9. Click **Next**.


Omni Archive - InstallShield Wizard
Setup Type
Select the setup type to install.
Please select a setup type.
Complete
All program features will be installed. (Requires the most disk space.)
Custom
Select which program features you want installed. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

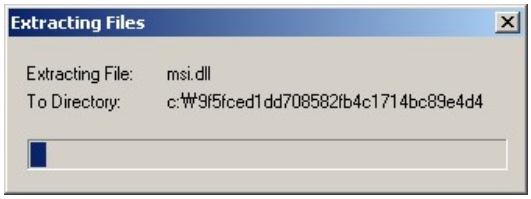
10. Click **Install**. This will start OmniArchive installation.


Omni Archive - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

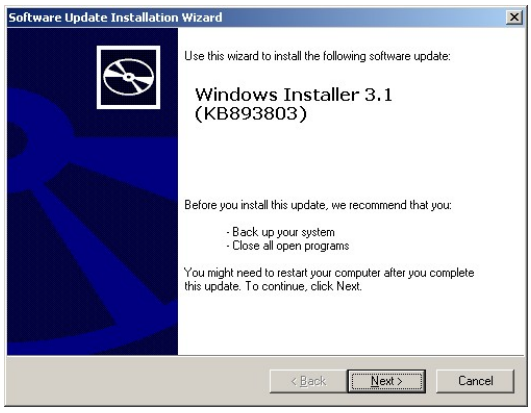
Note:

OmniArchive require Microsoft® .Net Framework v2.0, Windows Installer v3.1 and Microsoft® SQL Server 2005, and OmniArchive installer will start prerequisites installer in next step. If these programs have been installed, then you can skip 11 ~ 23, or you can cancel it during 11 ~23.

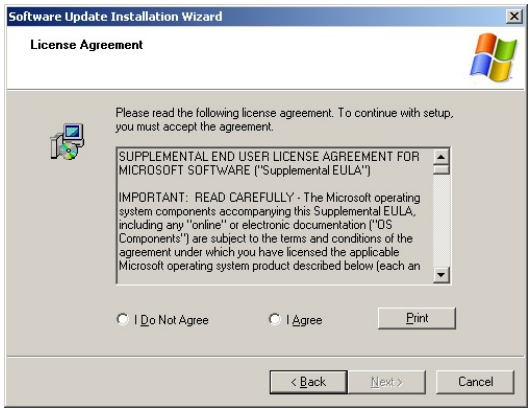
11. There will pop-up an “Extracting Files” dialog for few seconds, then will go to next step. **No user action is required in this step**.

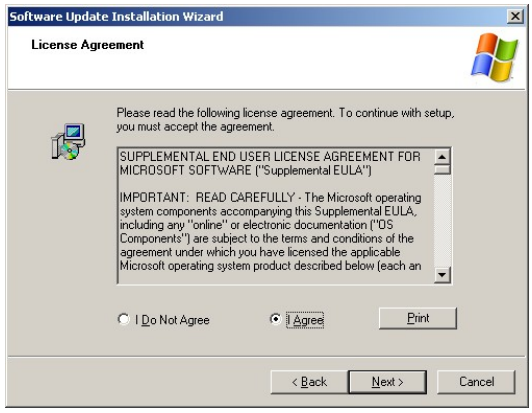


12. Click **Next**.

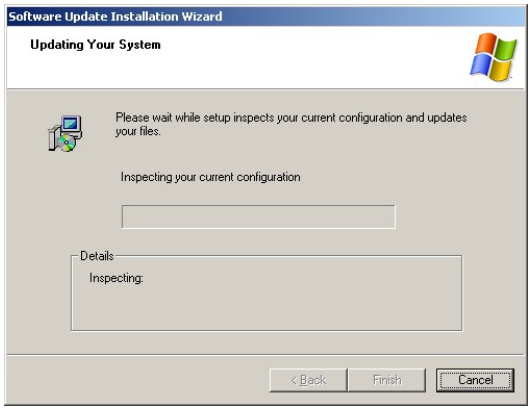

Software Update Installation Wizard
Use this wizard to install the following software update:
Windows Installer 3.1 (KB893803)
Before you install this update, we recommend that you:
- Back up your system
- Close all open programs
You might need to restart your computer after you complete this update. To continue, click Next.
< Back
Next >
Cancel

13. Click “**I Agree**” and **Next**.

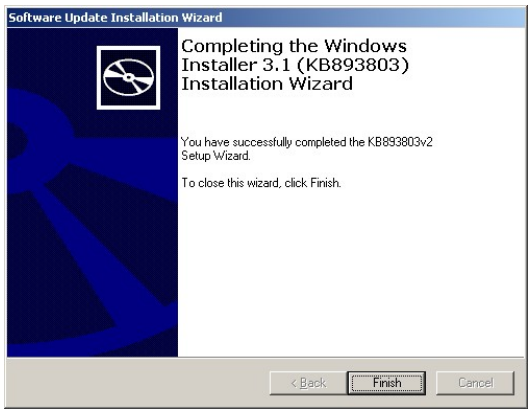

Software Update Installation Wizard
License Agreement
Please read the following license agreement. To continue with setup, you must accept the agreement.
SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE ("Supplemental EULA")
IMPORTANT: READ CAREFULLY - The Microsoft operating system components accompanying this Supplemental EULA, including any "online" or electronic documentation ("OS Components") are subject to the terms and conditions of the agreement under which you have licensed the applicable Microsoft operating system product described below (each an
I Do Not Agree
I Agree
Print
< Back
Next >
Cancel


Software Update Installation Wizard
License Agreement
Please read the following license agreement. To continue with setup, you must accept the agreement.
SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE ("Supplemental EULA")
IMPORTANT: READ CAREFULLY - The Microsoft operating system components accompanying this Supplemental EULA, including any "online" or electronic documentation ("OS Components") are subject to the terms and conditions of the agreement under which you have licensed the applicable Microsoft operating system product described below (each an
I Do Not Agree
I Agree
Print
< Back
Next >
Cancel

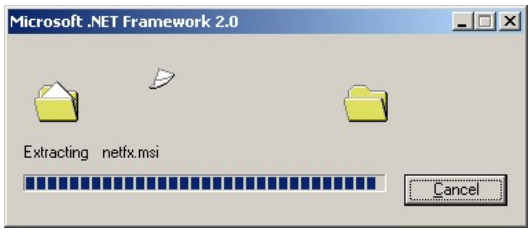
14. There will pop-up a “Software Update Installation Wizard” dialog for a few seconds, then will go to next step. **No user action is required in this step**.



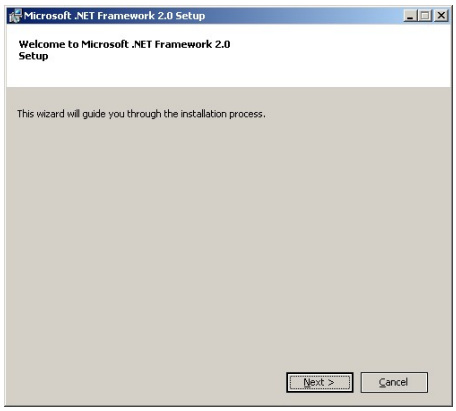
15. Click **Finish**.


Software Update Installation Wizard
Completing the Windows Installer 3.1 (KB893803) Installation Wizard
You have successfully completed the KB893803v2 Setup Wizard.
To close this wizard, click Finish.
< Back
Finish
Cancel

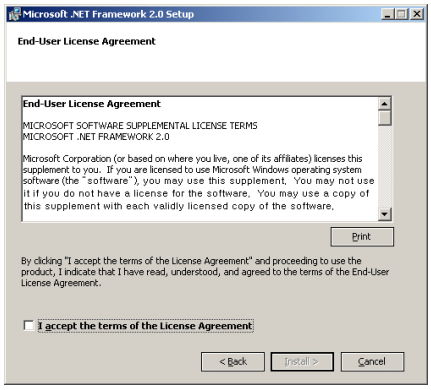
16. There will pop-up a “Microsoft .Net Framework 2.0” dialog for a few seconds, and then will go to next step. **No user action is required in this step**.



17. Click **Next**.


Microsoft .NET Framework 2.0 Setup
Welcome to Microsoft .NET Framework 2.0 Setup
This wizard will guide you through the installation process.
Next >
Cancel

18. Click "**I accept the term of the License Agreement**" and **Install**.


Microsoft .NET Framework 2.0 Setup
End-User License Agreement
End-User License Agreement
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
MICROSOFT .NET FRAMEWORK 2.0
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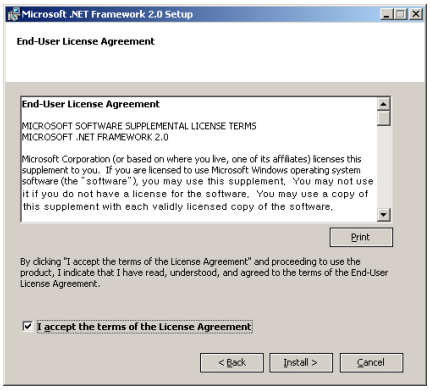
Print
By clicking "I accept the terms of the License Agreement" and proceeding to use the product, I indicate that I have read, understood, and agreed to the terms of the End-User License Agreement.
I accept the terms of the License Agreement
< Back
Install >
Cancel


Microsoft .NET Framework 2.0 Setup
End-User License Agreement
End-User License Agreement
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
MICROSOFT .NET FRAMEWORK 2.0
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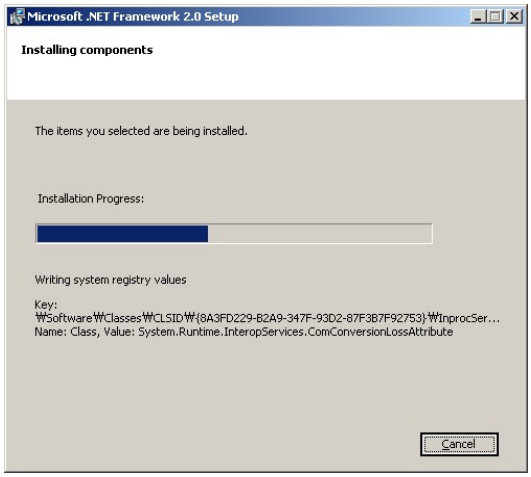
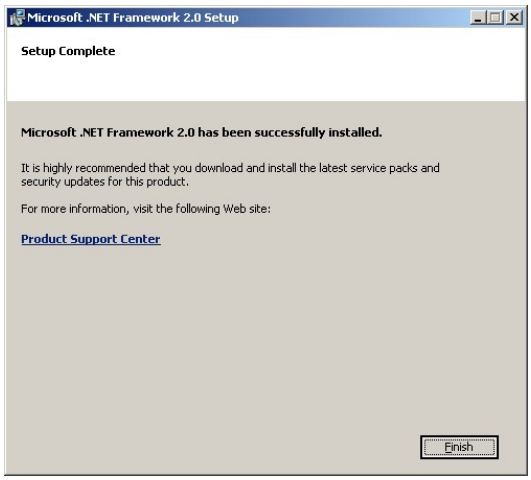
Print
By clicking "I accept the terms of the License Agreement" and proceeding to use the product, I indicate that I have read, understood, and agreed to the terms of the End-User License Agreement.
I accept the terms of the License Agreement
< Back
Install >
Cancel

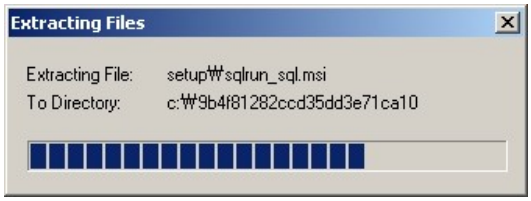
19. There will pop-up a "Microsoft .Net Framework 2.0 Setup" dialog for a few minutes, and then will go to next step. **No user action is required in this step**.



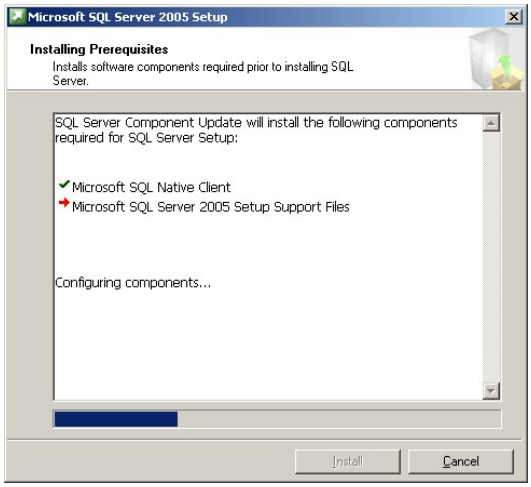
20. Click **Finish**.


Microsoft .NET Framework 2.0 Setup
Setup Complete
Microsoft .NET Framework 2.0 has been successfully installed.
It is highly recommended that you download and install the latest service packs and security updates for this product.
For more information, visit the following Web site:
Product Support Center
Finish

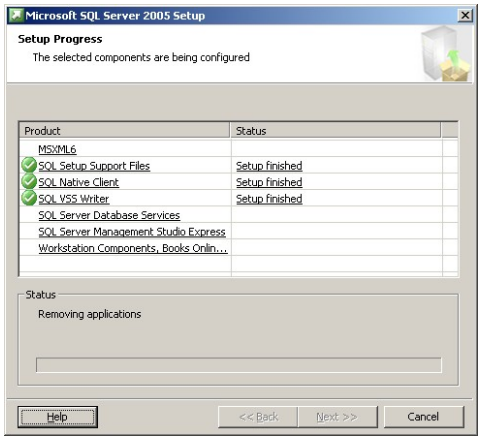
21. There will pop-up a “Extracting Files” dialog for a few minutes, and then will go to next step. **No user action is required in this step**.



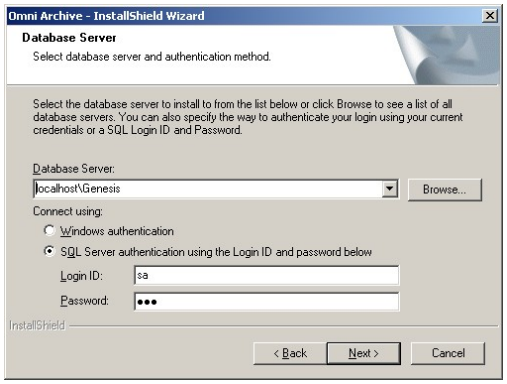
22. There will pup-up a “Microsoft SQL Server 2005 Setup” dialog for a few minutes, then will go to next step. **No user action is required in this step**.


Microsoft SQL Server 2005 Setup
Installing Prerequisites
Installs software components required prior to installing SQL Server.
SQL Server Component Update will install the following components required for SQL Server Setup:
Microsoft SQL Native Client
Microsoft SQL Server 2005 Setup Support Files
Configuring components...
Install
Cancel

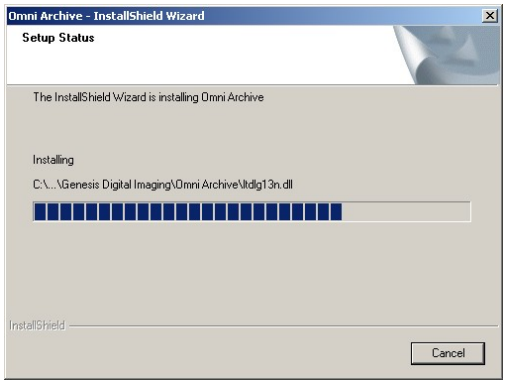
23. Microsoft SQL Server 2005 Setup will start automatically and it will take a few minutes to finish installation. **No user action is required in this step**.



24. **DO NOT CHANGE ANYTHING FROM FOLLOWING DIALOG** and Click **Next**.


Omni Archive - InstallShield Wizard
Database Server
Select database server and authentication method.
Select the database server to install to from the list below or click Browse to see a list of all database servers. You can also specify the way to authenticate your login using your current credentials or a SQL Login ID and Password.
Database Server:
localhost\Genesis
Browse...
Connect using:
Windows authentication
SQL Server authentication using the Login ID and password below
Login ID:
sa
Password:
InstallShield
< Back
Next >
Cancel

25. Now the installer will start installing OmniArchive. **No user action is required in this step**.



DIR and Files

Directory Info

OmniArchive creates the following directories (Logo, ARCHIVE, DICOM_IN, DICOM_OUT, DICOM_SEND_FAIL and DICOM_SENT) at *C:\Program Files\Genesis Digital Imagng\OmniArchive*. These directories are prerequisite and shall not be deleted or renamed or modified. Multiple program files will be created as well as described below. Upon start of OmniArchive for the first time, these directories (ARCHIVE, DICOM_IN, DICOM_OUT, DICOM_SEND_FAIL and DICOM_SENT) will be created automatically.

Mandatory Files

Logo.bmp

This file is necessary to operate OmniArchive.

OmniArchive.ini

This file contains options and setting value.
Located at C:\Windows

Dongle.ini
This file contains dongle options.

DLLs

To launch OmniArchive, these files are required.

How to setup

Following steps are based on “first time start of OmniArchive”. Please refer to “Chapter 3. How to use” to find configuration changes.

Before starting OmniArchive setup, USB dongle must be plugged-in and the driver installation is required.

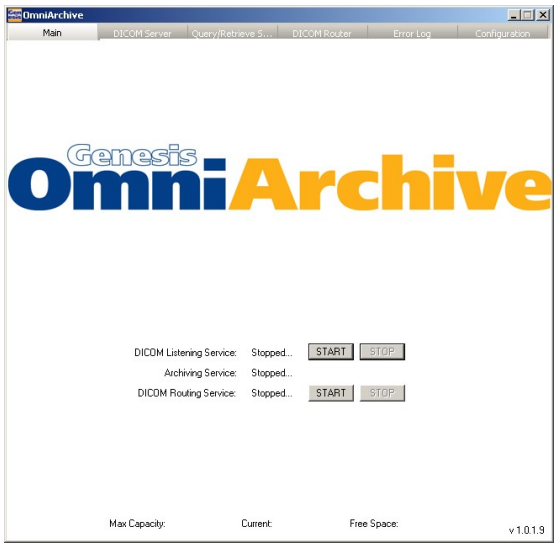
1. Run OmniArchive.

2. There will pop-up a “Loading…” dialog for few seconds, then will go to next step. **No user action is required**.

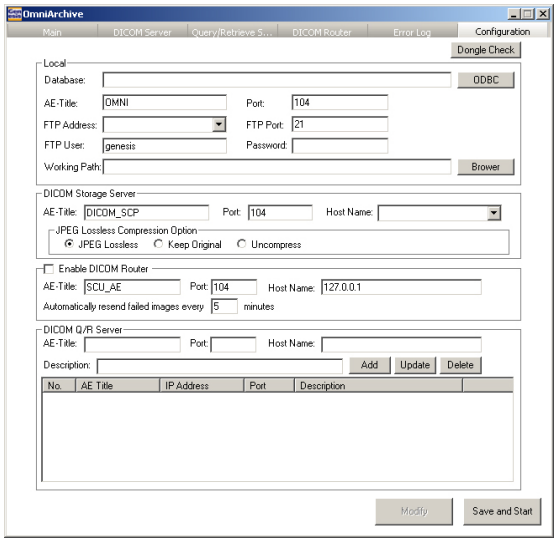
3. There will pop-up a “OmniArchive” dialog, then click “OK”.

4. There will pop-up a “Loading…” dialog for a few seconds, then will go to next step. **No user action is required**.

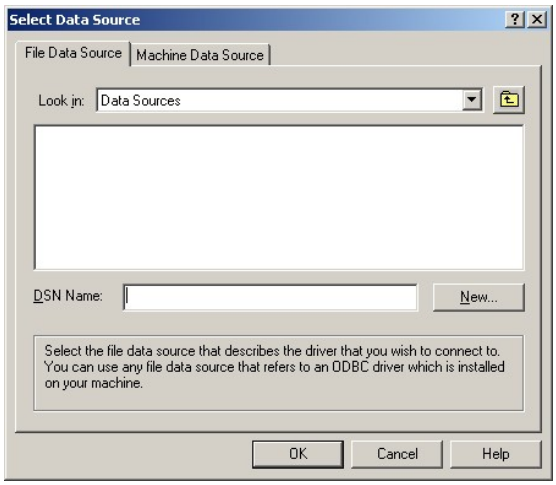
5. On OmniArchive main window, click **Configuration** tab.



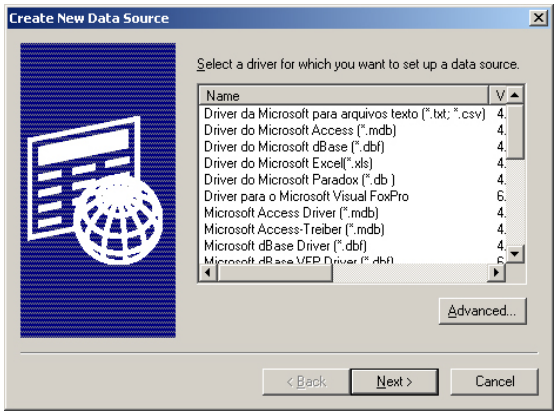
6. Click **ODBC** button.

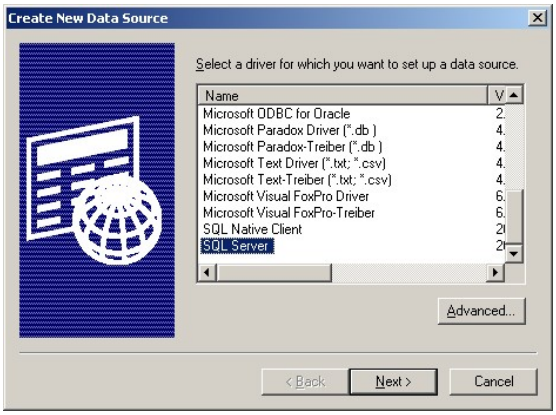


7. Click **New**.

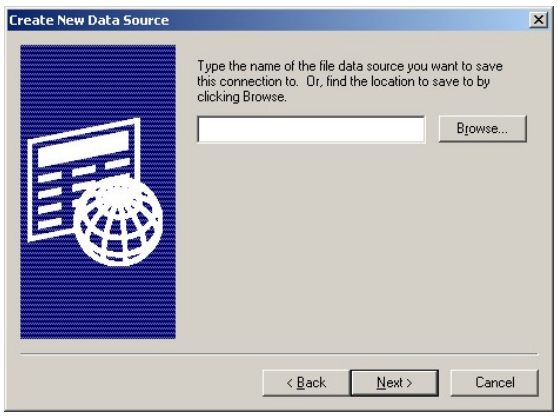

Select Data Source
File Data Source
Machine Data Source
Look in:
Data Sources
DSN Name:
New...
Select the file data source that describes the driver that you wish to connect to. You can use any file data source that refers to an ODBC driver which is installed on your machine.
OK
Cancel
Help

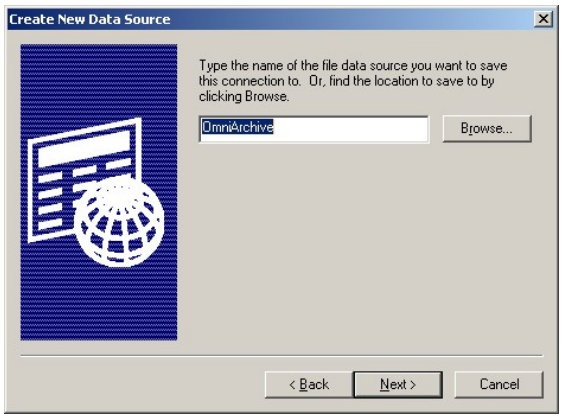
8. Scroll down and select **SQL Server**, and click **Next**.


Create New Data Source
Select a driver for which you want to set up a data source.
Name
Driver da Microsoft para arquivos texto (*.txt; *.csv)
Driver do Microsoft Access (*.mdb)
Driver do Microsoft dBase (*.dbf)
Driver do Microsoft Excel(*.xls)
Driver do Microsoft Paradox (*.db)
Driver para o Microsoft Visual FoxPro
Microsoft Access Driver (*.mdb)
Microsoft Access-Treiber (*.mdb)
Microsoft dBase Driver (*.dbf)
Advanced...
< Back
Next >
Cancel

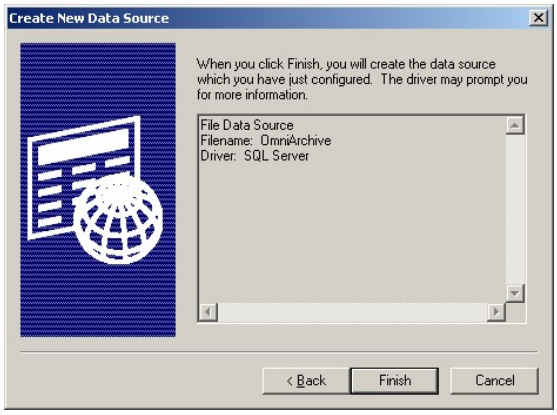


9. Type ***OmniArchive*** and click **Next**.

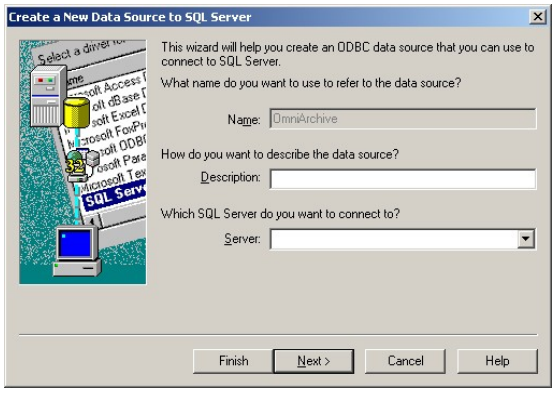

Create New Data Source
Type the name of the file data source you want to save this connection to. Or, find the location to save to by clicking Browse.
Browse...
< Back
Next >
Cancel


Create New Data Source
Type the name of the file data source you want to save this connection to. Or, find the location to save to by clicking Browse.
OmniArchive
Browse...
< Back
Next >
Cancel

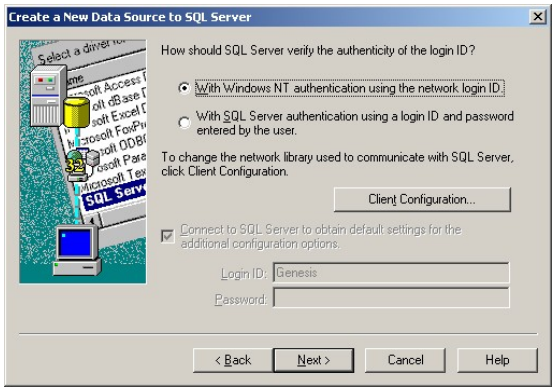
10. Click Finish.

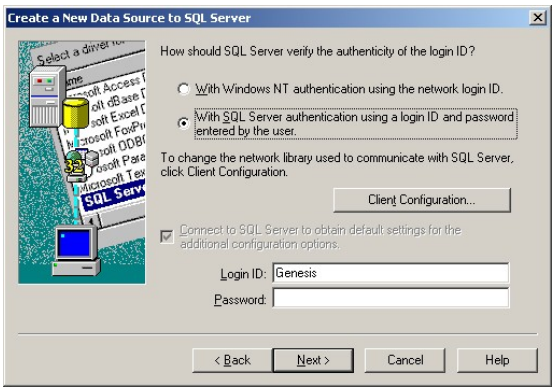

Create New Data Source
When you click Finish, you will create the data source which you have just configured. The driver may prompt you for more information.
File Data Source
Filename: OmniArchive
Driver: SQL Server
< Back
Finish
Cancel

11. Click **Next**.

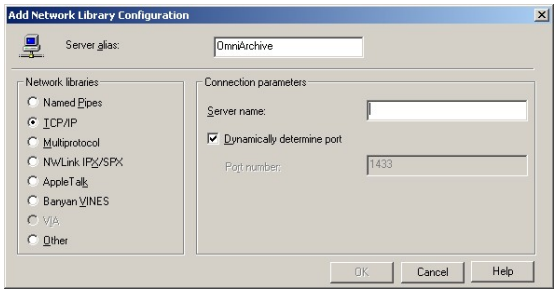

Create a New Data Source to SQL Server
This wizard will help you create an ODBC data source that you can use to connect to SQL Server.
What name do you want to use to refer to the data source?
Name: OmniArchive
How do you want to describe the data source?
Description:
Which SQL Server do you want to connect to?
Server:
Finish
Next >
Cancel
Help

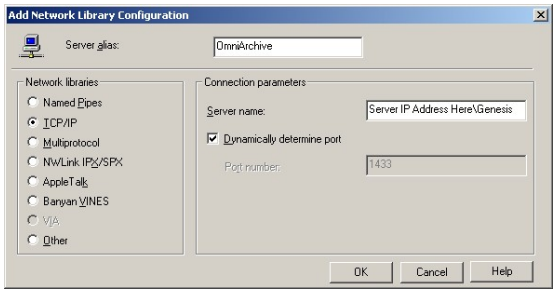
12. Select “With SQL Server authentification using a login ID and password entered by user” and click **Client Configuration**.

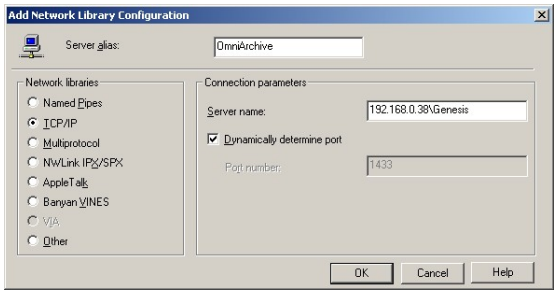

Create a New Data Source to SQL Server
How should SQL Server verify the authenticity of the login ID?
With Windows NT authentication using the network login ID.
With SQL Server authentication using a login ID and password entered by the user.
To change the network library used to communicate with SQL Server, click Client Configuration.
Client Configuration...
Connect to SQL Server to obtain default settings for the additional configuration options.
Login ID: Genesis
Password:
< Back
Next >
Cancel
Help


Create a New Data Source to SQL Server
How should SQL Server verify the authenticity of the login ID?
With Windows NT authentication using the network login ID.
With SQL Server authentication using a login ID and password entered by the user.
To change the network library used to communicate with SQL Server, click Client Configuration.
Client Configuration...
Connect to SQL Server to obtain default settings for the additional configuration options.
Login ID: Genesis
Password:
< Back
Next >
Cancel
Help

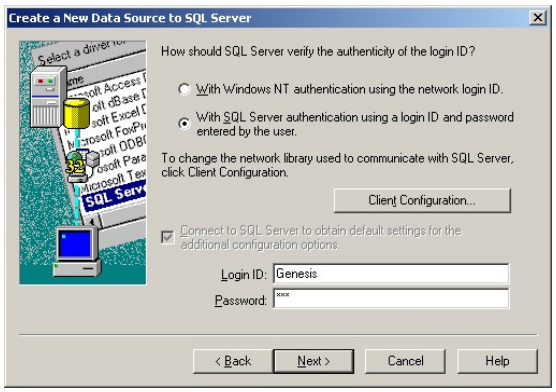
13. Type “**Server IP address\Genesis**” in Server name. For example server IP address is ***192.168.0.38***, then type “***192.168.0.38\Genesis***” in Server name, and then click **OK**. You need to get a server IP address from network administrator or PACS administrator.



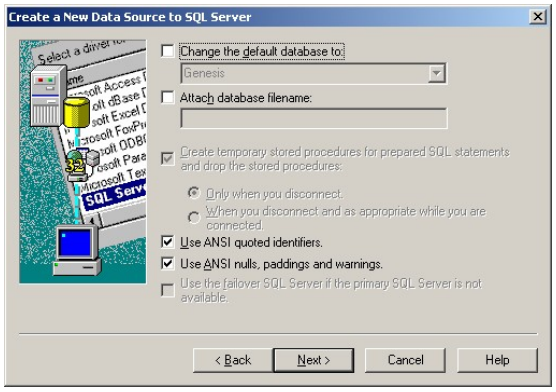


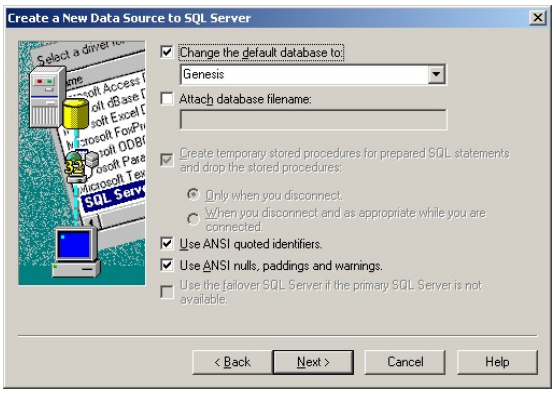


14. Type “**Genesis**” in Login ID and “**gdi**” in Password. And click **Next**.

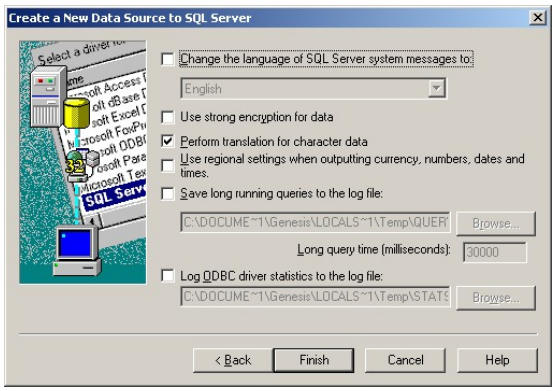

Create a New Data Source to SQL Server
How should SQL Server verify the authenticity of the login ID?
With Windows NT authentication using the network login ID.
With SQL Server authentication using a login ID and password entered by the user.
To change the network library used to communicate with SQL Server, click Client Configuration.
Client Configuration...
Connect to SQL Server to obtain default settings for the additional configuration options.
Login ID: Genesis
Password:
< Back
Next >
Cancel
Help

15. Check “Change the default database to:” and make sure “Genesis” is selected in combo box. And click **Next**.

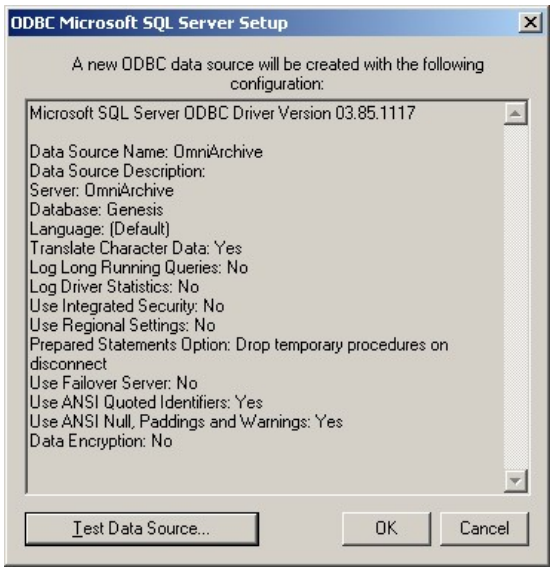

Create a New Data Source to SQL Server
Change the default database to:
Genesis
Attach database filename:
Create temporary stored procedures for prepared SQL statements and drop the stored procedures:
Only when you disconnect.
When you disconnect and as appropriate while you are connected.
Use ANSI quoted identifiers.
Use ANSI nulls, paddings and warnings.
Use the failover SQL Server if the primary SQL Server is not available.
< Back
Next >
Cancel
Help


Create a New Data Source to SQL Server
Change the default database to:
Genesis
Attach database filename:
Create temporary stored procedures for prepared SQL statements and drop the stored procedures:
Only when you disconnect.
When you disconnect and as appropriate while you are connected.
Use ANSI quoted identifiers.
Use ANSI nulls, paddings and warnings.
Use the failover SQL Server if the primary SQL Server is not available.
< Back
Next >
Cancel
Help

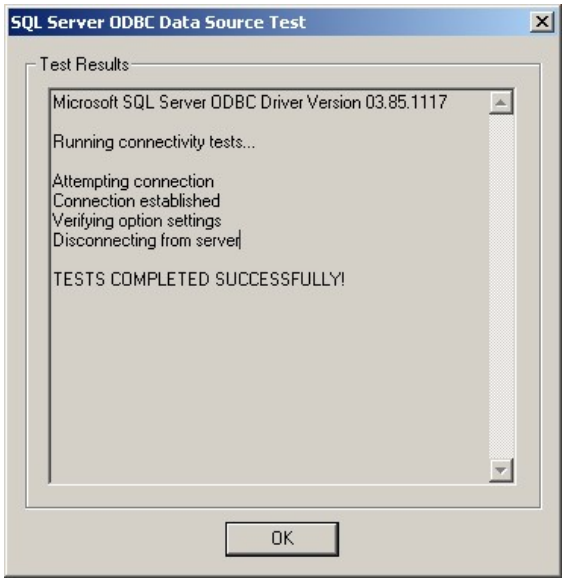
16. Click **Finish**.



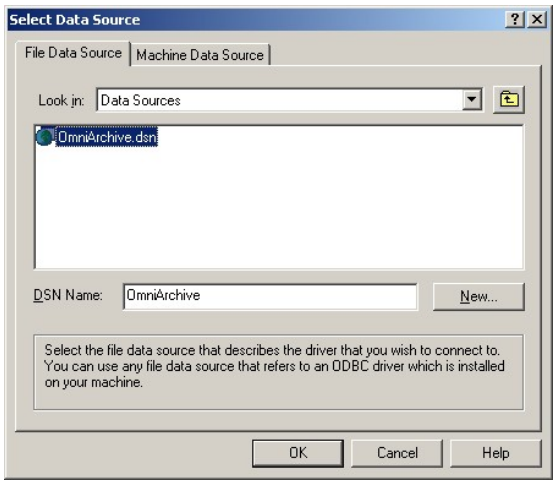
17. Click **Test Data Source**.


ODBC Microsoft SQL Server Setup
A new ODBC data source will be created with the following configuration:
Microsoft SQL Server ODBC Driver Version 03.85.1117
Data Source Name: OmniArchive
Data Source Description:
Server: OmniArchive
Database: Genesis
Language: (Default)
Translate Character Data: Yes
Log Long Running Queries: No
Log Driver Statistics: No
Use Integrated Security: No
Use Regional Settings: No
Prepared Statements Option: Drop temporary procedures on disconnect
Use Failover Server: No
Use ANSI Quoted Identifiers: Yes
Use ANSI Null, Paddings and Warnings: Yes
Data Encryption: No
Test Data Source...
OK
Cancel

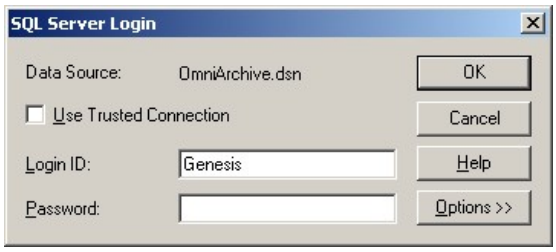
18. Make sure, you can see "**TESTS COMPLETED SUCCESSFULLY!**" in the window. And click **OK**.

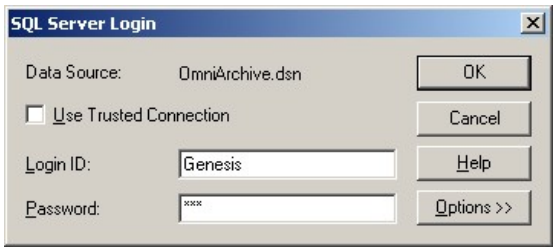


19. Click **OK**.

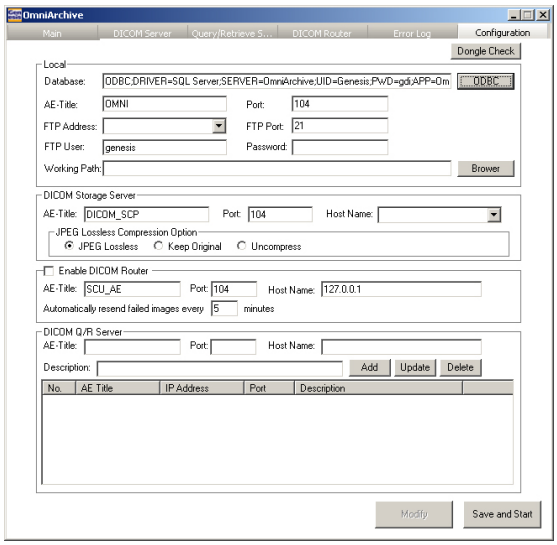

Select Data Source
File Data Source
Machine Data Source
Look in:
Data Sources
OmniArchive.dsn
DSN Name:
OmniArchive
New...
Select the file data source that describes the driver that you wish to connect to. You can use any file data source that refers to an ODBC driver which is installed on your machine.
OK
Cancel
Help

20. Type "**gdi**" in password and click **OK**.

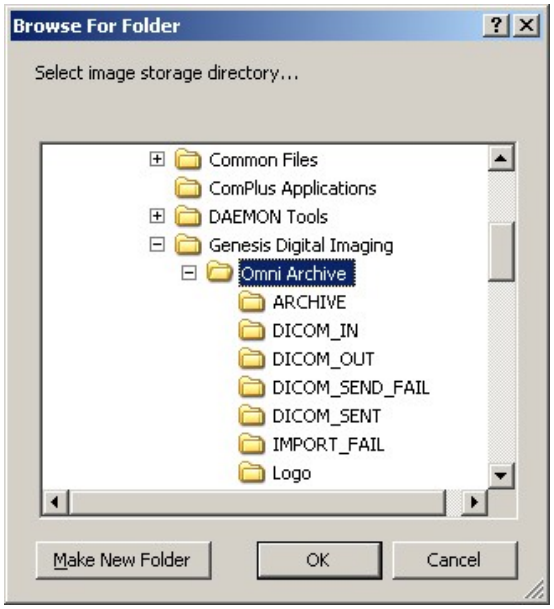




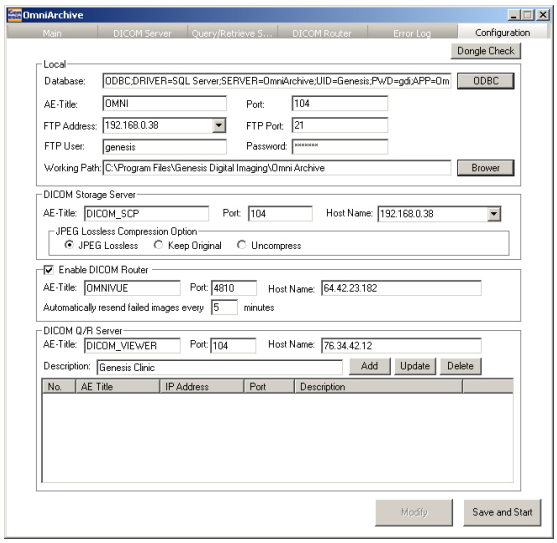
21. Select local computer IP address in the FTP Address and type "**genesis**" in the password, and then click "**Brower**"

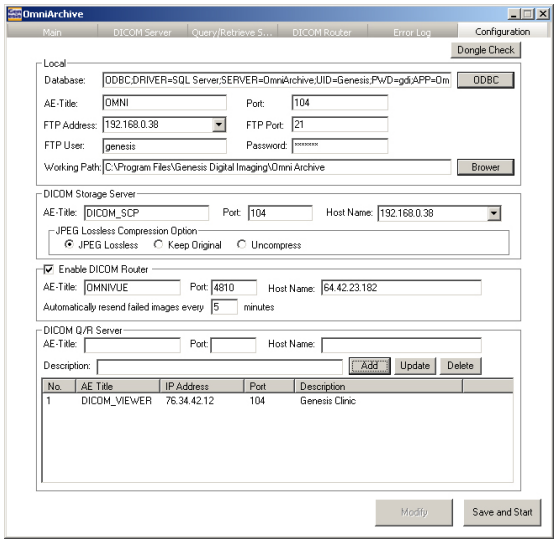


22. Select “**C:\Program Files\OmniArchive**” and click **OK**.

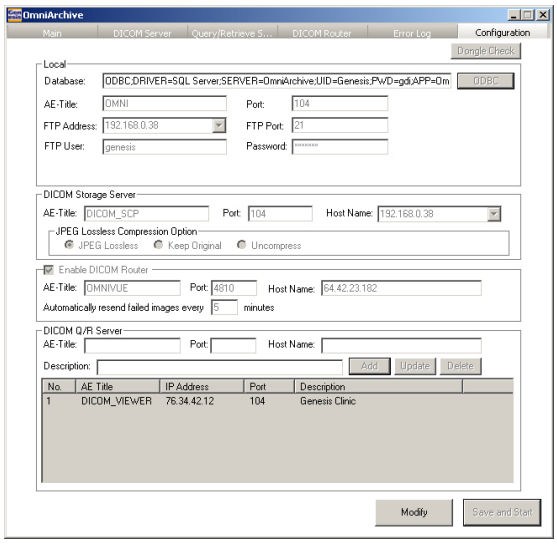


23. Select local computer IP address in the host name.
If you need auto-routing service, then check “**Enable DICOM Router**”.
If you need DICOM Query/Retrieve service, then type C-MOVE destination’s AE-Title, Port, Host Name and Description, after then click **Add**.



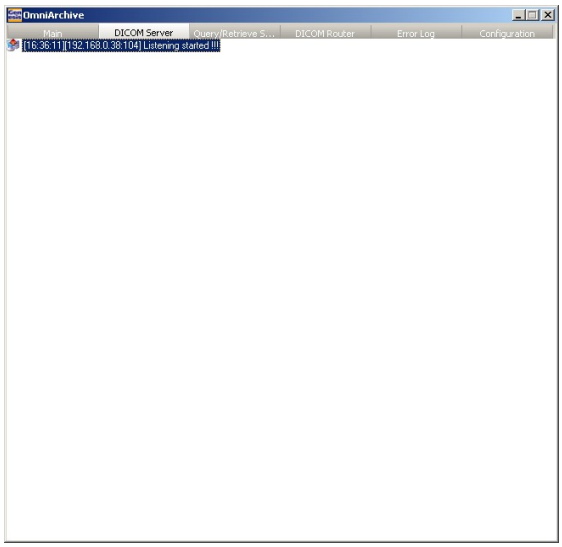


24. Click **Save and Start**.

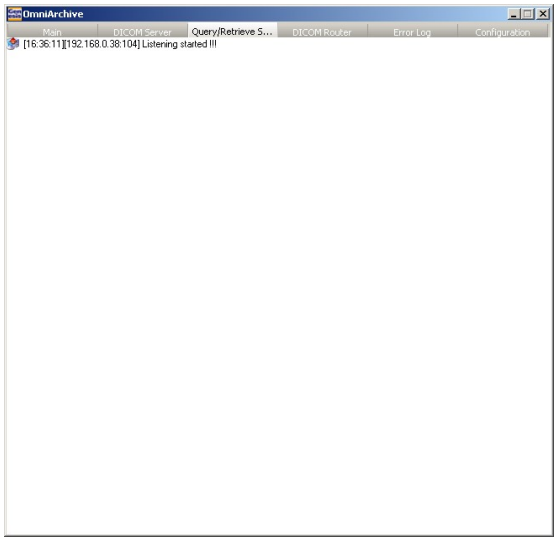


25. Click each tabs and make sure each service is running.

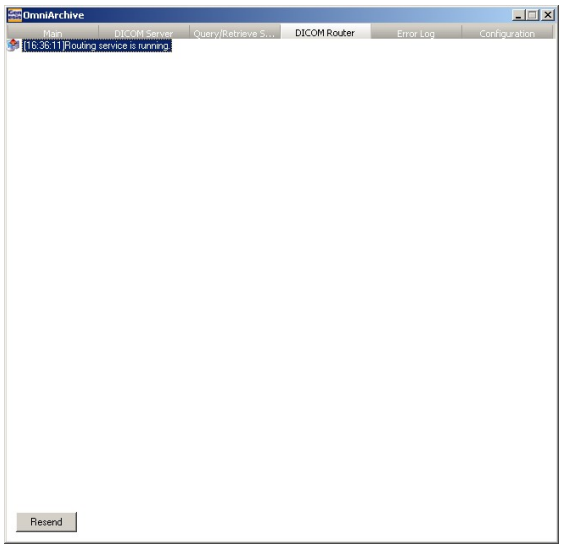
Main Tab



DICOM Server Tab



Query/Retrieve Server Tab



DICOM Router Tab

Note:

DICOM Router Service is not mandatory service, so PACS administrator can decide to disable it.

Modality Interface (M/I) and Testing

Modalities must be in compliance with DICOM protocol.
AE Title, Port Number and IP Address must be assigned in both modality and OmniArchive
Contact the modality provider to obtain more information.
- Please review DICOM conformance statement of modality.
- Some modalities can support limited DICOM standard functions.
- Some modalities can support multiple destinations for DICOM sending but some cannot.

Modality Types

Modality with DICOM interface
Modality should be supported DICOM Storage SCU and/or SCP

How to Configure Modality
(DICOM Network Association)

Modality DICOM Network Association
- AE Title, Port Number and IP Address must be assigned at the modality or its consoles or workstations.
- Modality must provide AE (Application Entity) Title
- Modality must provide Port Number
- Network administrator must provide IP Address for modality and OmniArchive

OmniArchive Network Association
- Check IP Address of OmniArchive
- AE title and Port Number are necessary at OmniArchive

Modality Interface Test

Network

Perform ping test to verify that network is operating properly. If ping test fails, check network equipment and cables for hardware failure.
If ping test is successful but images are not transferred from modality to OmniArchive, check DICOM configuration of the modality and OmniArchive. Verify IP address, AE title and Port number.
100Mbps (or faster) networking is strongly recommended.

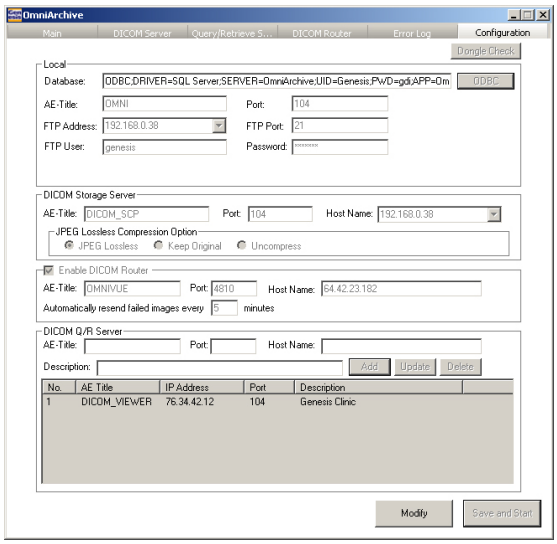
Chapter

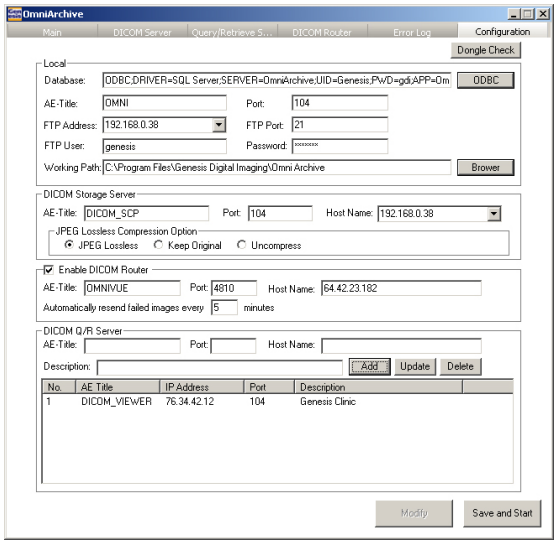
3 How to use OmniArchive

- **How to change DICOM Server Network**
- **How to enable DICOM Router**
- **How to add Query/Retrieve C-MOVE destination**

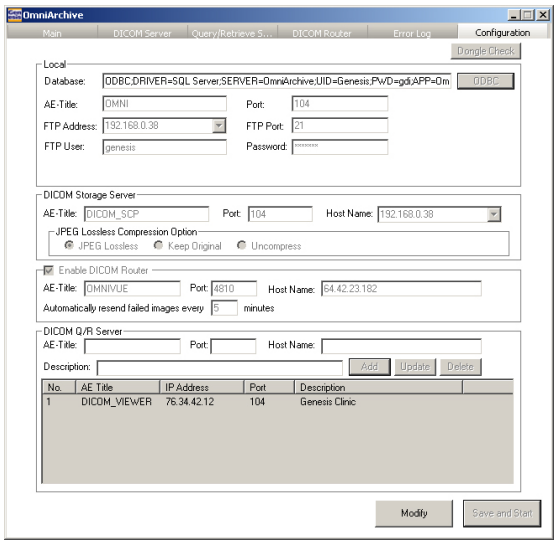
How to change DICOM Server Network

1. Click **Configuration** tab and click **Modify**.



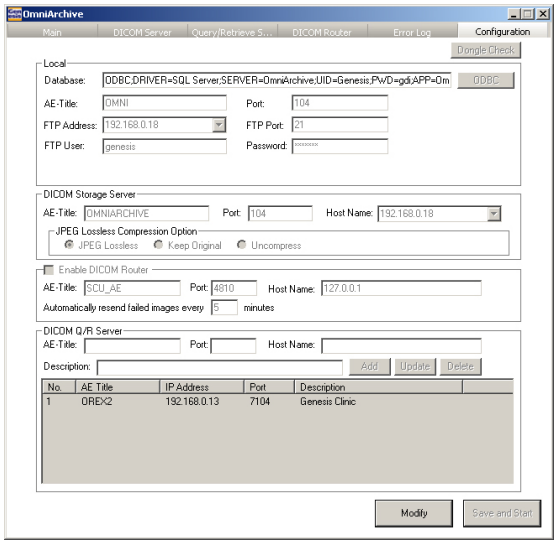


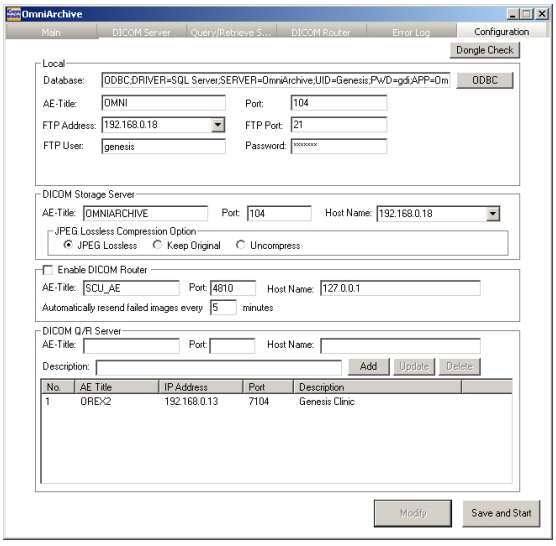
2. DICOM Storage Service frame is a place to have DICOM Server Network Information. You can change AE-Title, port and compression option from here. After changes, click "**Save and Start**".



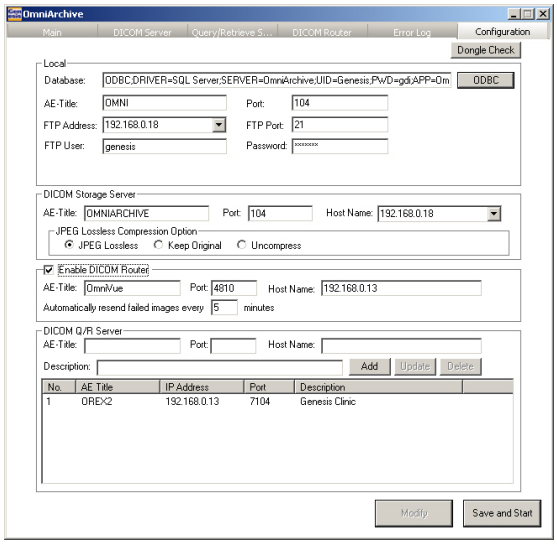
How to enable DICOM Router

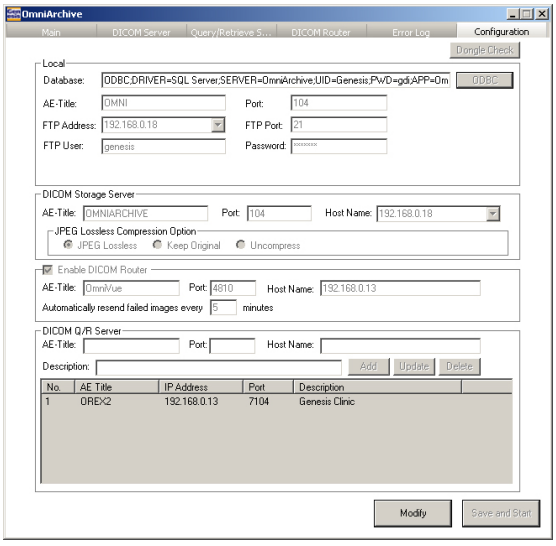
1. Click **Configuration** tab and click **Modify**.

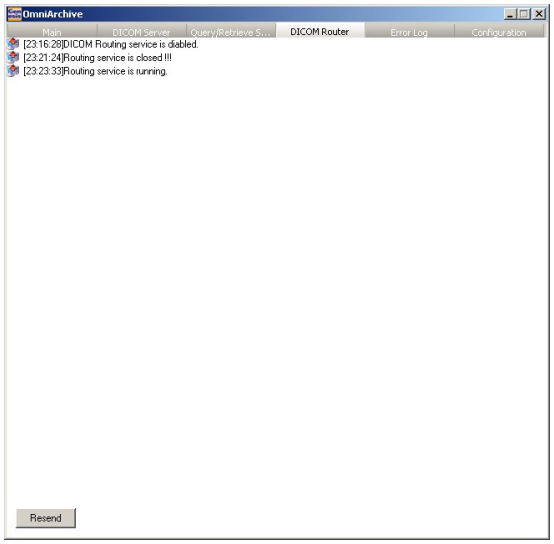




2. Click “Enable DICOM Router” and fill out rest of DICOM network information and click **Save and Start**. To verify DICOM Router service, click “DICOM Router” tab and see “***Routing Service is running***” on the window.

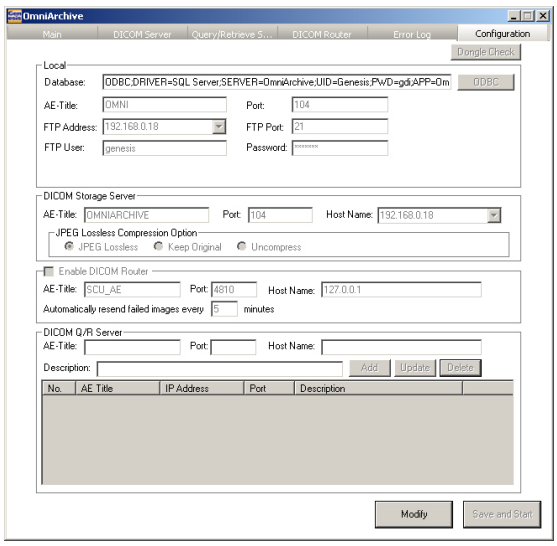


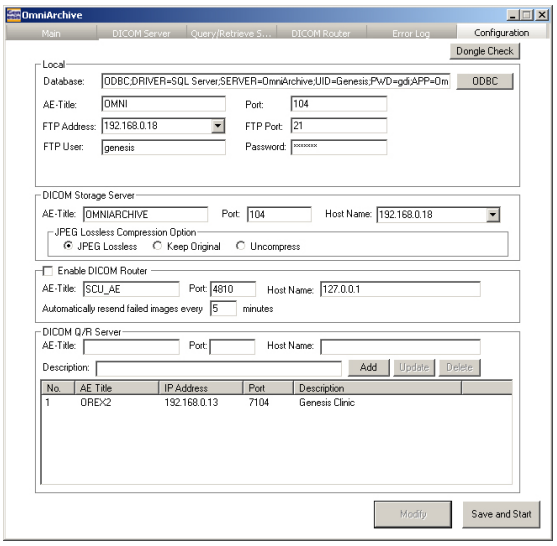




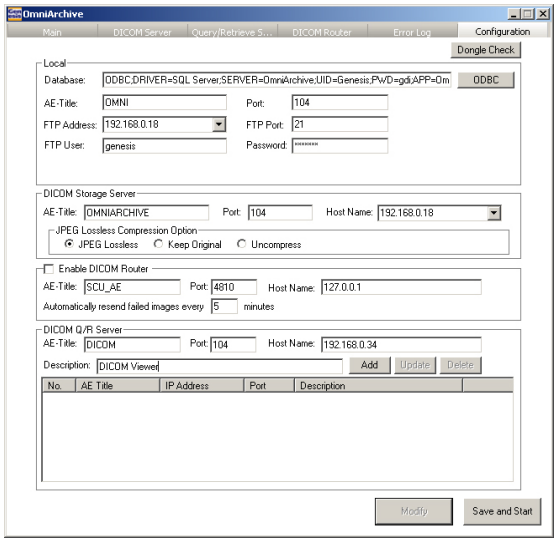
How to add Query/Retrieve C-MOVE destination

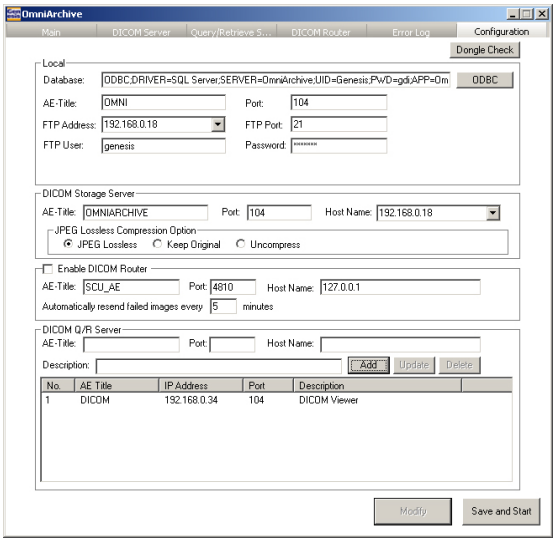
1. Click **Configuration** tab and click **Modify**.





2. Fill out the destination's *AE-Title, pot* and *IP address* in ***DICOM Q/R Server*** frame, and then click **Add**.





3. Click **Save and Start**. To verify DICOM service, click **Query/Retrieve Server** tab and see "**Listening Server!!!**" in the log view.